WHAT IS CLAIMED IS:

1. A liquid composition suitable for the etching and simultaneous desmutting of aluminum and aluminum alloys, comprising water and:

(A) an acid source comprising sulfuric acid and nitric acid; and

(B) a non-fluorine containing etchant source comprising phosphoric acid; and

(C) a stabilized oxidant comprising one or more compounds that are capable of oxidizing and/or ionizing ground state metals.

2. The liquid composition of claim 1, wherein the (C) stabilized oxidant comprises molybdate and/or condensed molybdate ions.

3. The liquid composition of claim 1, wherein the liquid composition further comprises (D) a wetting agent and/or a degassing agent.

4. The liquid composition of claim 1, wherein the liquid composition further comprises (E) a complexing agent and/or a grain modifier.

5. The liquid composition of claim 3, wherein the liquid composition further comprises (E) a complexing agent and/or a grain modifier.

6. The liquid composition of claim 1, wherein the sulphuric acid is present in an amount of 10 to 50 weight percent, based on the total weight of the liquid composition, the nitric acid is present in an amount of 0.5 to 15 weight percent, based on the total weight of the liquid composition, the phosphoric acid is present in an amount of 25 to 90 weight percent, based on the total weight of the liquid composition, and the stabilized oxident is present in an amount less than 2 weight percent, based on the total weight of the liquid composition.

7. The liquid composition of claim 2, wherein the sulphuric acid is present in an amount of 10 to 50 weight percent, based on the total weight of the liquid composition, the nitric acid is present in an amount of 0.5 to 15 weight

percent, based on the total weight of the liquid composition, the phosphoric acid is present in an amount of 25 to 90 weight percent, based on the total weight of the liquid composition, and the stabilized oxidant is present in an amount less than 2 weight percent, based on the total weight of the liquid composition.

8. The liquid composition of claim 6, wherein the sulphuric acid is present in an amount of 12 to 35 weight percent, based on the total weight of the liquid composition, the nitric acid is present in an amount of 1 to 10 weight percent, based on the total weight of the liquid composition, the phosphoric acid is present in an amount of 35 to 85 weight percent, based on the total weight of the liquid composition, and the stabilized oxident is present in an amount of 0.01 to 0.75 weight percent, based on the total weight of the liquid composition.

9. The liquid composition of claim 8, wherein the sulphuric acid is present in an amount of 18 to 25 weight percent, based on the total weight of the liquid composition, the nitric acid is present in an amount of 2.5 to 7.5 weight percent, based on the total weight of the liquid composition, the phosphoric acid is present in an amount of 45 to 70 weight percent, based on the total weight of the liquid composition, and the stabilized oxident is present in an amount of 0.05 to .25 weight percent, based on the total weight of the liquid composition.

10. The liquid composition of claim 5, wherein component (D) is present in an amount less than 0.1 weight percent, based on the total weight of the liquid composition.

11. The liquid composition of claim 5, wherein the component (E) is present in an amount of less than 10 weight percent, based on the total weight of the liquid composition.

12. The liquid composition of claim 11, wherein the water is present in an amount of 5 to 50 weight percent, based on the total weight of the liquid composition.

13. The liquid composition of claim 1, wherein the liquid composition comprises water and:

(1) diluted sulphuric acid;

(2) nitric acid;

(3) phosphoric acid;

(4) molybdate and/or condensed molybdate ions;

(5) a perfluoroalkyl sulfonate; and

(6) aluminum sulfate.

14. The liquid composition of claim 13, wherein the diluted sulphuric acid comprises an aqueous solution of sulphuric acid containing less than 80 weight percent sulphuric acid, based on the total weight of the aqueous sulphuric acid solution, with the diluted sulphuric acid being present in the liquid composition in an amount of 10 to 50 weight percent, based on the total weight of the liquid composition, wherein the nitric acid comprises an aqueous nitric acid solution containing nitric acid in an amount between 45 and 75 weight percent, based on the total weight percent of the nitric acid solution, with the nitric acid solution being present in the liquid composition in an amount of between 0.5 and 15 weight percent, based on the total weight of the liquid composition, wherein the phosphoric acid comprises an aqueous phosphoric solution containing the phosphoric acid in an amount less than 95% weight percent, based on the total weight of the aqueous phosphoric acid solution, with the phosphoric acid solution being present in the liquid composition in an amount of between 25 to 90 weight percent, based on the total weight of the liquid composition, wherein the component (4) is present in the liquid composition in an amount of less than 2 weight percent, based on the total weight of the liquid composition, wherein the perfluoroalkyl sulfonate is present in the liquid composition in an amount of less than 0.1 weight percent, based on the total weight of the liquid composition, wherein the aluminum sulfate is present in the liquid composition in an amount of less than 10 weight percent, based on the total weight of the liquid composition, and wherein the water is present in the liquid composition in an amount of between 5 and 50 weight percent, based on the total weight of the liquid composition.

15. The liquid composition of claim 13, wherein the liquid composition consists essentially of water and;

(1) diluted sulphuric acid;

(2) nitric acid;

(3) phosphoric acid;

(4) molybdate and/or condensed molybdate ions;

(5) a perfluoroalkyl sulfonate; and

(6) aluminum sulfate.

16. A method of etching and desmutting aluminum and its alloys, said method comprising:

exposing articles made of aluminum and its alloys to the liquid etching/desmutting composition of claim 1.

17. The method of claim 16, wherein the liquid composition comprises water and:

(A) an acid source comprising sulfuric acid and nitric acid;

(B) a non-fluorine etchant source comprising phosphoric acid; and

(C) a stabilized oxidant; and optionally one or more of the following:

(D) a wetting agent and/or a degassing agent; and

(E) a complexing agent and/or a grain modifier.

18. The method of claim 16, wherein the liquid composition comprises water and:

(1) diluted sulphuric acid;

(2) nitric acid;

(3) phosphoric acid;

(4) molybdate and/or condensed molybdate ions;

(5) a perfluoroalkyl sulfonate; and

(6) aluminum sulfate.

19. The method of claim 18, wherein the liquid composition is made by adding the water to a mixing tank, agitating the water, then adding the diluted sulphuric acid to the mixing tank, then sifting in the molybdate (4) and mixing until dissolved, then mixing in the nitric acid, the phosphoric acid, the perfluoroalkyl sulfonate, and the aluminum sulfate until a uniform composition results.

20. The method of claim 18, wherein the method further comprises rinsing the article with water after exposing the article to the liquid composition.

21. A liquid composition suitable for the etching and simultaneous desmutting of aluminum and aluminum alloys, comprising water and:

(1) diluted sulphuric acid;

(2) nitric acid;

(3) phosphoric acid; and

(4) molybdate and/or condensed molybdate ions.